

Lieberman teaches a piston assembly 16 formed by a main body 26 and a rack 28 (*see*, col. 1, ll. 38-44). *Lieberman* explicitly teaches that the main body 26 and the rack 28 are made separately and coupled together. In one example, the rack 28 is supported on a tripodal support formed by bosses 52, 54, 56 (*see, e.g.*, col. 3, ll. 35-37 and Fig. 1-3). There is no teaching or suggestion in *Lieberman* that the main body 26 is molded around the rack 28 as asserted in the Office Action. Should the Examiner continue to maintain that *Lieberman* teaches a piston molded around the rack, the Examiner is requested to specify where such teaching is found.

Also on page 3 of the Office Action, the Examiner considers the claim features “[the toothed rack being] embedded in the piston by molding the polyoxymethylene plastic around the rack” as a process step and takes the position that such “process step can not be relied upon for determining patentability in an apparatus claim.” In support of this, the Examiner relies on MPEP 2113, which reads in part as follows:

The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. *See, e.g., In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) (holding “interbonded by interfusion” to limit structure of the claimed composite and noting that terms such as “welded,” “intermixed,” “ground in place,” “press fitted,” and “etched” are capable of construction as structural limitations.).

The leading cases in this area include *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), and *In re Pilkington*, 162 USPQ 145, 147 (CCPA 1969). These cases explain when a “product-by-process” claim is patentable. Basically, in order to be patentable, the product must have structural characteristics that distinguish it from the prior art. It cannot be the same as or obvious from the prior art product. In *Thorpe*, the product, though made by a different process, was no different than the product made by a prior art process. Thus, the claims were held to be

unpatentable. In *Pilkington*, on the other hand, the product (plate glass manufactured on a bed of molten metal), the claims were found to be patentable because the glass itself was different from the prior art plate glass made with rollers. This is the seminal case on product-by-process claims, and is still good law.

Product-by-process claims are useful when the process of manufacture imparts unique and useful characteristics to a product, but there is no easy way to describe those characteristics besides referring to the manufacturing process. Such was the case in *Pilkington*, and such is the case here. The molding of the plastic piston around the rack creates an integrated one-piece structure wherein the molding of the plastic around the rack would be readily apparent to one skilled in the art. At the same time, there is no convenient way to describe this structure other than by reference to the manufacturing process.

Neither *Ginzel* nor *Lieberman* suggests a plastic piston which is molded around a metal rack. *Ginzel* discloses plastic piston with a plastic rack, and *Lieberman* discloses a metal rack which is attached to a piston after the two components have been separately manufactured. Neither reference suggests molding a plastic piston around a metal rack, and consequently does not suggest the structure created by this process.

In light of the foregoing, withdrawal of the 35 U.S.C. §102(e) rejection of independent claim 9 is respectfully requested.

Claims 9, 10 and 12-16 also stand rejected under 35 U.S.C. §103(a) as being unpatentable over WO 00/36255 (which is the International Priority Application of *Ginzel*) in view of U.S. Patent No. 6,077,908 (*Yahiro*). This rejection is respectfully traversed.

As is discussed in detail above, *Ginzel/Lieberman* fails to suggest an important structural feature features of independent claim 9. *Yahiro* is cited in the Office Action as disclosing using

polyoxymethylene plastic to make a variety of products and does not remedy the above discussed deficiencies of *Ginzell/Lieberman*. As a result, the combination of *Ginzell* and *Yahiro* also fails to teach or suggest the above recited claim features of independent claim 9.

In view of the foregoing, withdrawal of the 35 U.S.C. §103(a) rejection of independent claim 9 is respectfully requested.

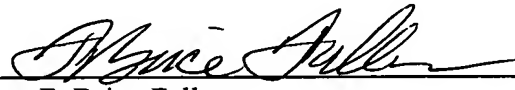
Dependent claims 10 and 12-16 are allowable for at least the same reasons that amended independent claim 9 is allowable.

In view of the foregoing, the claims define patentably over the art of record without amendment, wherefore withdrawal of the rejections and early allowance are solicited.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

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